

UNIVERSITY OF HAWAII

Environmental Center

Office of the Director

January 11, 1972

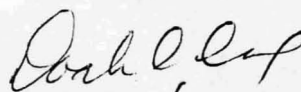
Dr. Walter B. Quisenberry
Director of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

Dear Dr. Quisenberry:

We submit herewith ten copies of testimony I wish to present at the public hearing this morning concerning amendments to air quality and air quality control regulations.

Later in the day we will provide you with copies of testimony to be presented at this evening's hearing on the air quality control implementation plan.

Yours very truly,


Doak C. Cox
Director

DCC:wto

cc: Air Quality Task Force
Wytze Gorter, Chairman, E.C. Policy Comm.
Stuart M. Brown, Jr., Acad. Vice President

UNIVERSITY OF HAWAII

Environmental Center

Office of the Director

STATEMENT FOR DEPARTMENT OF HEALTH PUBLIC HEARING ON AMENDMENTS OF CHAPTER 42, ADOPTION OF CHAPTER 43 AND REPEAL OF CHAPTER 31 AND 35, PUBLIC HEALTH REGULATIONS

11 January 1972

Dr. Quisenberry and members of the Board of Health:

My name is Doak C. Cox. I am Director of the Environmental Center of the University of Hawaii and an ex officio member of the Center's Air Quality Task Force. In the Statement I am presenting I am joined by the following members of the Task Force: Wilfrid Bach, Professor of Geography, Chairman; Boyce Brown, attorney; Robert Buddemeier, Assistant Professor of Chemistry; Anders Daniels, Assistant Professor of Meteorology; Saul Price, National Oceanic and Atmospheric Administration; and Samuel Yoshida, Tuberculosis and Respiratory Disease Association. The statement does not represent an institutional position of the University of Hawaii.

On the proposed amendment of Chapter 42 of the Public Health Regulations being considered at this hearing we have no comment.

The other two items considered at this hearing we regard as essentially one: the substitution of a new chapter, "Air Control Regulations" applicable throughout the State, for two old chapters, one applicable only to Oahu, the other only to Maui County.

We believe that air pollution control throughout the State is not only required by federal law but desirable from the standpoint of the welfare of the people of the State. This does not mean that we believe that air pollution control should be uniform throughout the State. Regional geographic differences will certainly warrant regional differences in treatment under pollution control regulations. However, the air pollution regions that may most effectively be recognized for control purposes are at least as likely to correspond to land-use districts or other subdivisions as to islands or counties. Hence the retention or development of separate general methodologies of regulation for each county or island seem unwise and, in any case, the present regulations covering only the island of Oahu and the County of Maui will not meet federal requirements. Hence, we endorse the principle and much of the substance of the substitution proposed.

Some of the provisions of the proposed new Chapter 43 are carried over from the old Chapters 31 and 35. Some are new and, in our opinion necessary, desirable, or at least unobjectionable. We believe, however, that some of the air quality emission restrictions in sections 7 through 17 are arbitrary, unlikely to achieve desired results, or likely to have offsetting undesirable side-effects, and hence may be considered objectionable.

The probable efficacy of emission restrictions cannot be estimated without knowing what their intent is. Unfortunately, there is no statement of intent in Chapter 43. The discussion of control strategy in Section VII of the proposed "Implementation Plan" that is to be considered at tonight's hearing indicates that the major intent of most of the emission restrictions is to define degrees of control considered necessary for the attainment of federal and state ambient air quality standards. Some of the emission restrictions may be intended deliberately to provide for additional controls beyond those necessary to meet the ambient standards, though this intent is nowhere expressed in Chapter 43 or in the "Implementation Plan." The control restrictions are not tied in with variances from ambient standards, and none deal with pollutants for which ambient standards have not been set.

It should be recognized that several kinds of restrictions on emissions are possible and some may be expressed in several ways:

- a. Restrictions may be placed on specific pollutant concentrations in certain emissions;
- b. Restrictions may be placed on specific pollutant emission rates, and these may be expressed relative to various bases: per capita, per unit area, per input or output unit, per machine, etc.;
- c. Restrictions may be placed on total process emissions relative to the same kinds of bases;
- d. Restrictions may be placed on the locations or times of release of emissions;
- e. Restrictions may be placed on the pollutant concentrations of raw materials or fuels used in processes that result in their emissions;
- f. Or restrictions may be placed on practices and processes that result in emissions.

Let us now discuss, as examples to indicate grounds for objection, just two of the proposed emission restrictions in Chapter 43 with respect to probable intent, efficacy in terms of that intent, additional benefits, and costs.

Section 13 provides that after 1 June 1974 no fuel shall be burned containing more than 1.4 percent sulfur by weight, and that in power plants of greater than 25 megawatt capacity no fuel shall be burned containing more than 0.45 percent sulfur. The reasons for selecting these figures are not given in Chapter 43. However, in the discussion of the control strategy for sulfur dioxide in the "Implementation Plan" we find that the 1.4 percent sulfur content is slightly higher than the content of fuel oil which was being used during an ambient air sampling survey on an unidentified date in the vicinity of an unidentified power plant, and the 0.45 percent is stated to be the sulfur content to which the fuel oil would have to be reduced to achieve the State's ambient air quality 24-hour standard for SO₂.

However, can it be assumed that the maximum SO₂ content in the ambient air resulting from that specific power plant was disclosed by the sampling survey? If not, the limiting fuel sulfur content would have to be lower than 0.45 percent. More seriously, if attainment of the ambient air quality standard for SO₂ is the intent, as it would appear, why are strategies alternate or additional to the control of sulfur content in the fuel not stated? Among such strategies, the removal of the sulfur from the effluent would probably be more expensive than the use of fuel of lower sulfur content, but the increase in stack height might be cheaper. Finally, it cannot be assumed that the same maximum SO₂ content in the ambient air exists in the vicinity of thermal plants using fuel of similar sulfur content but with differing combustion rates, stack heights, and climatic exposures. Hence the application of the same restriction in fuel sulfur content is not rational.

A general reduction of sulfur content in power plant fuel would, of course, be advantageous in reducing the SO₂ content of the air generally, as well as in reducing the content relative to the ambient air quality standard. But if general reduction of sulfur content is the intent of the restriction on fuel, what is the rationale for the 0.45 percent sulfur as against, say, 0.40 percent? What are the relative availabilities and costs of fuels with sulfur contents equal to and less than those required for attainment of the ambient SO₂ standard in the vicinity of various power plants, what would their use achieve in the way of ambient SO₂ concentrations, and what would be the associated costs of power to the consumer? To limit the sulfur content of fuel to 0.45 percent without regard to the circumstances under which a higher sulfur content might be permissible or an even lower sulfur content advisable, in terms of the relevant meteorological conditions and the location of the source, does not appear to be an equitable approach or one that could be depended on to achieve the intended air quality.

In Section 7(c) it is proposed that agricultural burning be controlled through a permit system in accordance with meteorological criteria, and that it be prohibited after 1 January 1980. To judge from the discussion on control strategy for particulate matter in Section VII of the proposed "Implementation Plan", at least part of the intent again appears to be the achievement of an ambient air quality standard, in this case the annual particulate standard. That section, and particularly table VII-2, indicate that no reduction in annual total emissions is counted on from the meteorological control of burning, but that the prohibition of burning is counted on to help reduce the annual average particulate concentration to the State standard.

It should immediately be noted that the value selected for maximum annual average particulate concentration is that measured at Ala Moana, Oahu. The particulate concentration at this station is scarcely affected by agricultural burning on Oahu. Hence the elimination of such burning, which is counted on to reduce the maximum particulate concentration at Ala Moana to the State standard, will actually have no significant effect at all.

UNIVERSITY OF HAWAII

Environmental Center

Office of the Director

Supplementary Remarks by Doak C. Cox
at DOH 11 January 1972 Morning Hearing

Dr. Quisenberry, let me now turn from the statement prepared with the assistance of our Air Quality Task Force and add orally three additional comments:

First, in his discussion of means alternative to burning for the disposal of agricultural field wastes, Dr. John Hylin of the University has mentioned certain effects of these alternatives on other environmental elements than the air. In my opinion, some of the detrimental effects mentioned by Dr. Hylin must clearly be placed in balance against the advantages of reducing air pollution that would be achieved by a ban on agricultural burning.

Second, the testimony presented so far has been overwhelmingly weighted towards advocating lesser rather than greater control of air pollution. Most of the objections to controls proposed by the Department are based on economic considerations. It is right that economic considerations must be taken into account, but I believe that together with some obviously factual information there has been some overestimate of the costs and considerable underestimate of the benefits in the testimony. The Department of Health deserves some support for its attempt to improve our air environment.

I recognize that these past two comments may seem in a general way opposed. To a degree this is correct, but this is in large measure because of the illogic of the controls proposed by the Department of Health, not because on the whole they are too stringent or too lax. In my third comment, then, I wish to reinforce the need for the reexamination of the controls proposed in the light of a balance of social benefits and costs, and attempt to place these controls on a logical and equitable base in the way we have recommended in our formal testimony.